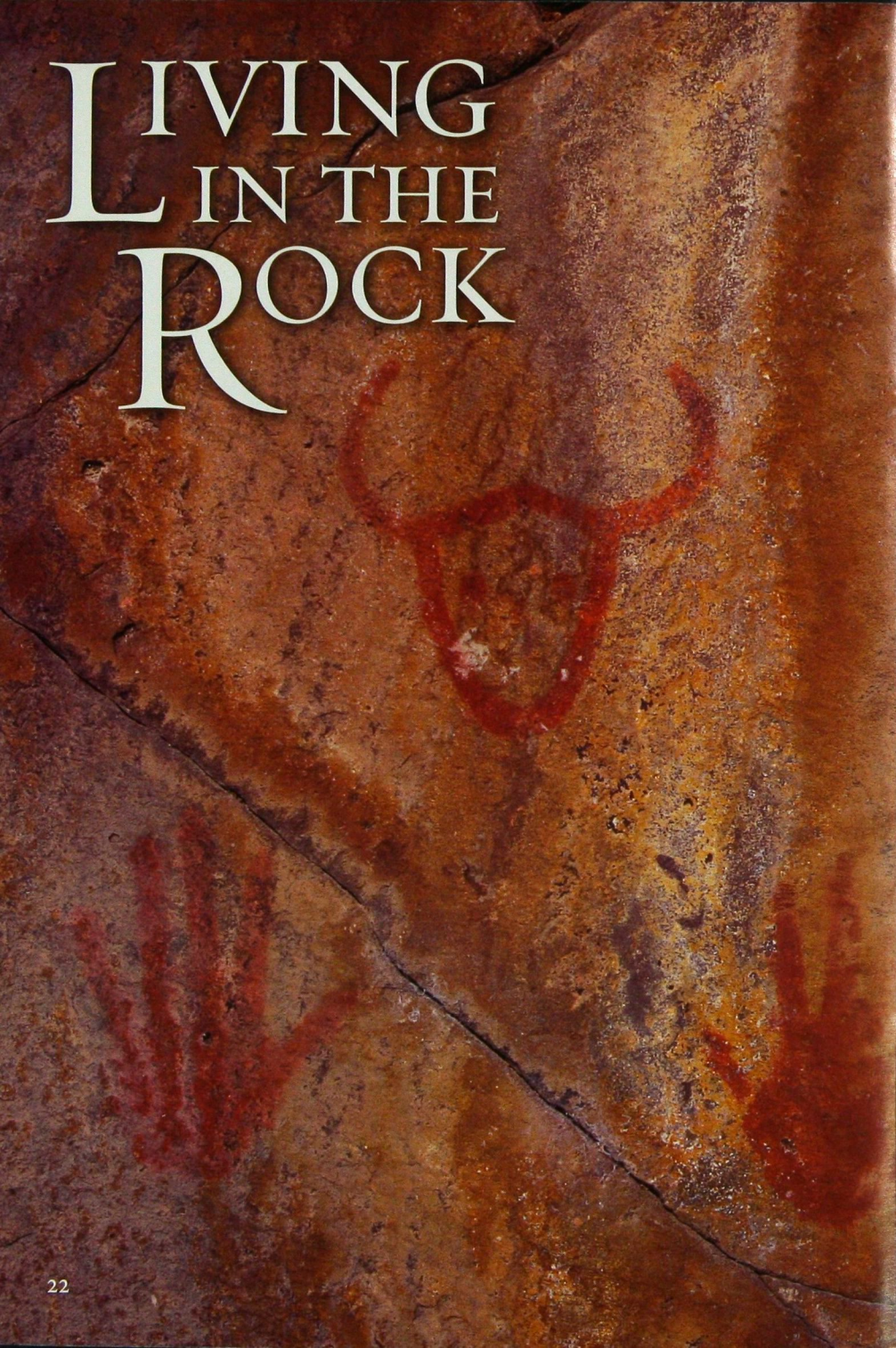
LIVING IN THE ROCK



Ancient paintings abide on Minnesota rocks in the wilderness and on the prairie.

BY JON KRAMER

While on a canoe trip in the Boundary Waters Canoe Area Wilderness in the late 1970s, I paddled close by a sheer granite cliff and saw what appeared to be graffiti painted on its face. I was appalled: Who would dare slander this sacred wilderness by spray-painting graffiti way out here?!

I moved closer, determined to gather evidence and report the crime to authorities. I examined the scene and saw dark red images on a flat, vertical cliff face. The "graffiti artist" had painted two canoes with people in them and three simple human figures nearby. The whole scene was 4 feet tall and 5 feet wide and right along the water, seemingly executed with a spray can from a canoe.

Though the images that first caught my eye were fairly clear, a nearby section had scarcely discernible red markings. The red splotches looked as though someone had tried to wash off the images, or as if they had faded like an advertisement painted on a brick building a hundred years ago.

As I got closer I had to laugh at myself. These were not graffiti at all—they were ancient pictographs. Right there before me

MARK DUDZIK, OFFICE OF THE STATE ARCHAEOLOGIST

MARK DUDZIK, OFFICE OF THE STATE ARCHAEOLOGIST

MICHAEL FURTMAN

BETWEEN WORLDS
Signs of Indian life appear in rock art around the state: St. Croix River (left), Hegman Lake (top), near Red Wing (middle), and Basswood River (bottom).

was an artifact of an ancient culture, a truly magnificent message from hundreds or thousands of years ago.

Who were the people who created the painting? What was this place like when they were living or traveling here? Why did they paint these images? From that point on, rock art became a serious interest of mine. I wanted to learn more about the mysterious artists and their environment.

Petroglyph or Pictograph?

Ancient rock art is divided by primary method of execution into two groups: petroglyphs and pictographs.

Petroglyph derives from the root word *petro,* meaning rock, and *glyphe,* or carving. Petroglyphs are rock carvings etched in stone by chipping away the surface.

The tools found at petroglyph sites provide clues to ancient artists' techniques. Some sites have yielded bone tools and antlers used to carve soft rock. Stone itself has been the most commonly found implement. The technique often involved using a heavy hammer stone to strike a pointed chisel stone. With multiple blows of hammer and chisel, the artist could create a pattern much in the same way a sculptor carves marble.

The beauty of petroglyphs is in their natural contrast of colors. Abundant, naturally occurring iron oxides coat the outside of many rocks with a dark stain. Ancient people chipped into the surface, exposing the lighter shades below and using the natural contrast to create elaborate panels with scenes of hunts, ceremonies, war, worship,

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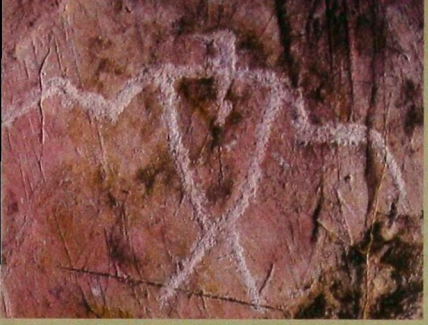
***Jon Kramer** is a geologist and director of Potomac Museum Group, a Twin Cities research and educational organization.*

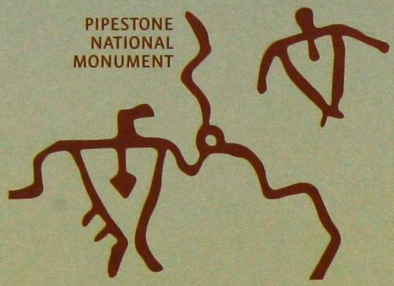
JEFFERS PETROGLYPHS

For thousands of years, American Indians have come to this living sacred site. Rock carvings range from 5,000 years old to recent times, according to archaeologists. Engraved on quartzite bedrock by members of several different Indian communities, the picture writing speaks to the perseverance of people on the prairie.

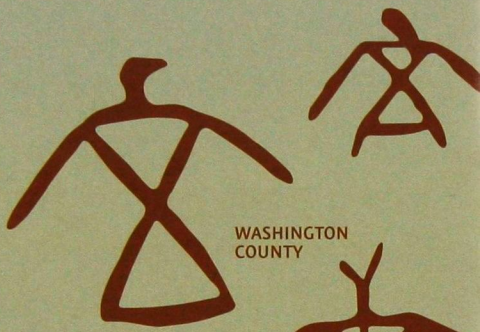
Jeffers Petroglyphs State Historic Site visitor center is open to the public and tours are available from May through September. Call 507-628-5591.



PHOTOGRAPHS BY KEVIN L. CALLAHAN



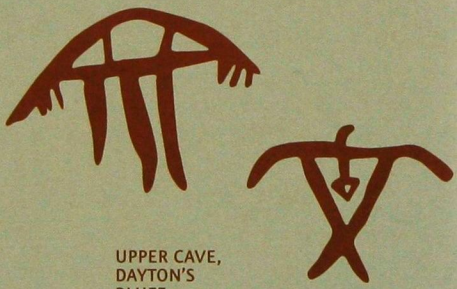
PIPESTONE NATIONAL MONUMENT



WASHINGTON COUNTY

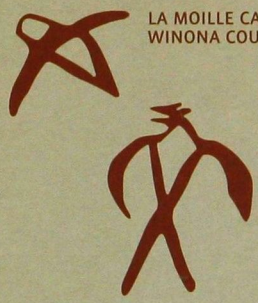
MICHAEL FURTMAN

LAC LA CROIX, BWCAW

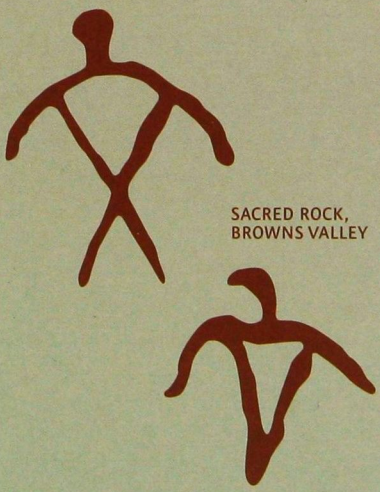


UPPER CAVE, DAYTON'S BLUFF

THUNDERBIRD SOURCE MATERIAL: KEVIN L. CALLAHAN, DEPARTMENT OF ANTHROPOLOGY, UNIVERSITY OF MINNESOTA; ALAN R. WOOLWORTH, RESEARCH FELLOW EMERITUS, MINNESOTA HISTORICAL SOCIETY



LA MOILLE CAVE, WINONA COUNTY



SACRED ROCK, BROWNS VALLEY

MINNESOTA THUNDERBIRDS

A spirit being that resembles a large bird or winged person, the thunderbird appears in rock carvings and paintings across the United States and Canada. Jeffers Petroglyphs has more than 100 such figures, including some with bison horns and one with a heart motif. Along with thunderbirds, boulders in Browns Valley have carvings shaped like turkey tracks.

and other forms and figures.

Pictograph derives from the root words *pictus,* meaning to paint, and *graphos,* meaning of painting, drawing, or writing. Pictographs are painted forms or symbols made on stone.

To obtain various pigments, the artists ground minerals and plants, much in the same way we obtain artist pigments today. Pulverizing hematite produced red ochre, the most common pigment in Minnesota pictographs. Not surprisingly, hematite is an iron mineral common here, especially on the Iron Range.

The painters presumably mixed pigments with a binder and applied them to the rock surface by hand or with a brush, perhaps fashioned from fur, bird feathers, leather, or plants. Some rock-art researchers speculate ancient painters used egg yolk or animal oils, binders widely used by artists today. Other researchers suggest the use of blood or urine—still used by some artists in Africa. Yet others have proposed that the pigment alone stained the surface well enough to last hundreds or thousands of years.

As a general rule, the method used (pictograph or petroglyph) depended on the type of rock available. Softer rocks, such as sandstones, shale, and some basalts, are easily etched and retain carvings far longer than paintings. A lake near Ely has an outcrop of basalt (a billion-year-old solidified lava flow) ground down and polished by the glaciers of the last Ice Age. The site is covered with petroglyphs.

Most of the rock in northern Minnesota is granite, which is very hard to carve. Because of this, ancient people in northern Minnesota used pictographs as a preferred form of expression. Many of these picto-

graphs are recognizable yet today.

An exception to the soft rock/hard rock rule is at Jeffers Petroglyphs State Historic Site in southwestern Minnesota. Here ancient people carved thousands of petroglyphs in red Sioux quartzite. This deep-red sediment, ground and polished by glaciers, is just as hard as granite.

Minnesota Sites

Minnesota has more than 50 rock-art sites documented by researchers of the Minnesota Historical Society, the Office of the State Archaeologist, and Upper Midwest Rock Art Research Association, a group of individuals dedicated to documenting and preserving such sites.

Many sites in northern Minnesota have pictographs and are found scattered around border lakes, including Lake of the Woods and Lac La Croix. Most are on sheer vertical rock faces of granite, and most are beneath overhangs or in clefts or other spots protected from the weather. Interestingly, few, if any, lichens grow in the places chosen for the images.

Petroglyphs have been found in several sites, mostly in the southwestern part of the state. They tend to be carved on smoothed glacial rock, although some in southeastern Minnesota have been found in caves. The best example is Jeffers Petroglyphs State Historic Site, located on a bald knob of red Sioux quartzite. The glacially polished outcrop, about 700 feet long by 150 feet wide, peeks up above prairie grasses. On its face are more than 2,000 carvings of 200 different images—one of the largest concentrations of such images in North America. American Indians from all over the Midwest come to the site for rituals, offerings, and sacred ceremonies.

If you visit the historic site, you may wander along the roped trail and get close to many familiar images—turtles, bison, thunderbirds, insects, and other animals, as well as human forms, footprints, and handprints. You'll also see many objects you'd be hard pressed to decipher—seemingly abstract shapes repeated again and again. Many of the petroglyphs represent *atlatls* (devices for throwing spears).

Pipestone National Monument in the far southwestern corner of the state has excellent examples of petroglyphs inside its visitor center. The petroglyphs once encircled granite boulders known as Three Maidens. Unfortunately, they were removed from their original settings. Because of this they have incurred damage and their exact original arrangements are not known.

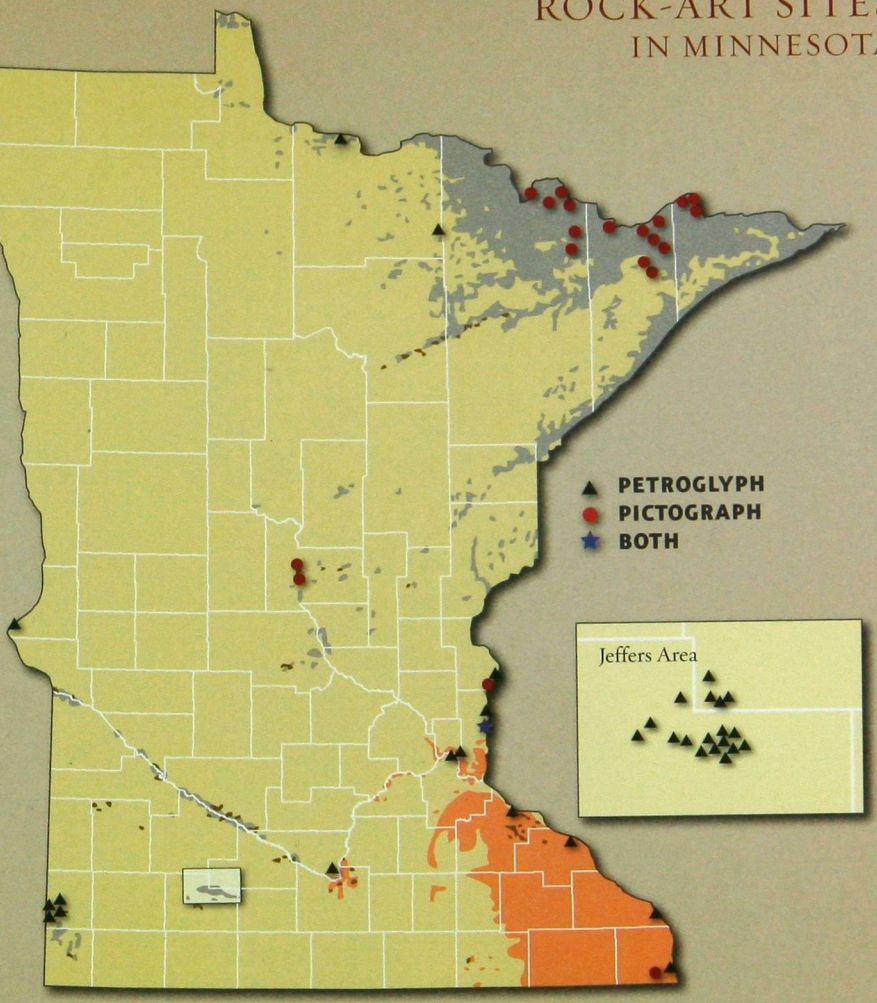
The Search for Meaning

The term *rock art* is something of a misnomer. It is unlikely that the authors of these ancient images made them with the idea they were "art" as we would define it. But like so many other forms of cultural expression—clothing, architecture, and writing, to name just a few—they have an inherent artistic quality. And because many petroglyphs and pictographs are artistic in appearance, the term *rock art* came into popular play.

Though an image might look like a certain animal, plant, or tool, it might actually represent something else entirely. To the Ojibwe people, for example, the image of a turtle could symbolize an island, a continent, or even the Earth as a whole.

To decipher what the images mean, a researcher needs to know who made them.

ROCK-ART SITES IN MINNESOTA



BEDROCK OUTCROPS

MESOZOIC formed 248 million to 65 million years ago
Sandstone, shale, and clay; some limestone and gypsum

PALEOZOIC formed 544 to 248 million years ago
Sandstone, shale, coal, and limestone

PRECAMBRIAN formed 4.5 billion to 544 million years ago
Granite, greenstone, and gneiss (west-central and south); also slate, schist, gabbro and basalt flows; quartz sandstones

MAP BY MATT KANIA. SOURCE MAPS MARK DUDZIK, OFFICE OF THE STATE ARCHAEOLOGIST

GEORGE CATLIN PAINTING OF PIPESTONE, INCLUDING THREE MAIDENS FORMATION. COURTESY SMITHSONIAN AMERICAN ART MUSEUM.

PERLEY'S CHART OF PETROGLYPHS ADAPTED FROM "THE PIPESTONE PETROGLYPHS" BY CHARLES BAILEY AND THOMAS THIESSEN

FRAGMENTS AT PIPESTONE

In 1836 artist George Catlin visited the quarries where American Indians mined a soft, red stone (catlinite), which they carved into pipes. His painting (above) depicts not only the quarries but also the boulders called Three Maidens. Catlin said the Indian people's "veneration of them is such that not a spear of grass is broken or bent . . . within three or four rods of the group." He also noted the petroglyphs on bedrock at the boulders' base: "Here to be seen (and will continue to be seen for ages to come), the totems and arms of the different tribes, who have visited this place for ages past."

Around 1876 a homesteader named George Perley is believed to have recorded the individual petroglyphs. Perley's Chart (above) may be the only record of the petroglyphs in place.

Charles Bennett (right), a founder of the nearby city of Pipestone, had slabs of the petroglyphs removed around 1888. He kept them in his side yard and occasionally exhibited them.

Some slabs may have disappeared, and one was broken. The visitor center at Pipestone National Monument holds the remaining collection. For visitor information, call 507-825-5464.

Most native cultures in North America have contributed art in various forms to the archaeological record. Pottery, baskets, and textiles with designs on them all help us to follow the artistic "signature" of certain peoples, but only if we can place it in context with that culture.

Unfortunately, most petroglyphs and pictographs cannot be assigned a cultural context. For example, say we find the remains of a camp below a cliff with a petroglyph on it. Does that mean the people of the camp made the petroglyph? It is possible. But it is also possible the petroglyph preceded the camp, or had been done long after the camp was abandoned. We cannot be sure because no one has developed an absolute method of dating rock art.

Some rock art, however, offers clues to its origins in similarities to myths, legends, or other art of a given people. The Ojibwe, for example, have stories describing spirit-beings called manitous. Some manitou images at rock-art sites resemble those on Ojibwe baskets, painted skins, and other art forms. This suggests Ojibwe ancestors created some rock art in canoe country, but we cannot be certain.

It is not so easy to suggest a particular culture that made the petroglyphs at Jeffers and Pipestone historic sites. Many tribes moved across the area throughout recorded history and probably in prehistoric times as well. It is likely, therefore, that several cultures contributed to the creation of the petroglyphs, and that they did so over many years. Certainly the ancestral Dakota are among the primary groups responsible for the creation of these images.

MINNESOTA HISTORICAL SOCIETY

Although it is often difficult, if not impossible, to accurately date rock art, sometimes the images contain clues. We know that ancient hunters used atlatls before the advent of the bow and arrow. This suggests the images of atlatls were made between 5,000 and 2,500 years ago.

Similarly, many of the pictographs in northern Minnesota closely follow Ojibwe legends. Because the Ojibwe people arrived in this region within the past 500 years or so, this suggests that some of the pictographs might be 300 to 400 years old.

If You Encounter Rock Art

All rock art is fragile and sensitive to disruption. Because of this, the specific location of most sites is closely guarded information. If you come across what appears to be rock art, do not touch the images because your body oils can harm the pigments of a pictograph, and rubbing will accelerate erosion of petroglyphs. It is illegal to damage rock-art sites. If you can, photograph the site and contact the Office of the State Archaeologist to determine whether you have made a new discovery.

Wherever you see rock art, enjoy the opportunity to observe, honor, and wonder at the work of another time and civilization.